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SIRT4 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO2108a

Product Information

Application	WB, FC, ICC, E
Primary Accession	Q9Y6E7
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	6G6D2
Isotype	IgG1
Calculated MW	35188
Description	This gene encodes a member of the sirtuin family of proteins, homologs to the yeast Sir2 protein. Members of the sirtuin family are characterized by a sirtuin core domain and grouped into four classes. The functions of human sirtuins have not yet been determined; however, yeast sirtuin proteins are known to regulate epigenetic gene silencing and suppress recombination of rDNA. Studies suggest that the human sirtuins may function as intracellular regulatory proteins with mono-ADP-ribosyltransferase activity. The protein encoded by this gene is included in class IV of the sirtuin family.
Immunogen	Purified recombinant fragment of human SIRT4 (AA: 215-314) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide

Additional Information

Gene ID	23409
Other Names	NAD-dependent protein deacetylase sirtuin-4 {ECO:0000255|HAMAP-Rule:MF_03161}, 3.5.1.- {ECO:0000255|HAMAP-Rule:MF_03161}, NAD-dependent ADP-ribosyltransferase sirtuin-4 {ECO:0000255|HAMAP-Rule:MF_03161}, 2.4.2.- {ECO:0000255|HAMAP-Rule:MF_03161}, Regulatory protein SIR2 homolog 4 {ECO:0000255|HAMAP-Rule:MF_03161}, SIR2-like protein 4 {ECO:0000255|HAMAP-Rule:MF_03161}, SIRT4 {ECO:0000255|HAMAP-Rule:MF_03161}, SIR2L4
Dilution	WB~~1/500 - 1/2000 FC~~1/200 - 1/400 ICC~~N/A E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SIRT4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SIRT4 {ECO:0000255|HAMAP-Rule:MF_03161, ECO:0000312|HGNC:HGNC:14932}
Function	Acts as a NAD-dependent protein lipoamidase, biotinylase, deacetylase and ADP-ribosyl transferase (PubMed:16959573, PubMed:17715127, PubMed:24052263, PubMed:25525879). Catalyzes more efficiently removal of lipoyl- and biotinyl- than acetyl-lysine modifications (PubMed:24052263, PubMed:25525879). Inhibits the pyruvate dehydrogenase complex (PDH) activity via the enzymatic hydrolysis of the lipoamide cofactor from the E2 component, DLAT, in a phosphorylation-independent manner (PubMed:25525879). Catalyzes the transfer of ADP-ribosyl groups onto target proteins, including mitochondrial GLUD1, inhibiting GLUD1 enzyme activity (PubMed:16959573, PubMed:17715127). Acts as a negative regulator of mitochondrial glutamine metabolism by mediating mono ADP-ribosylation of GLUD1: expressed in response to DNA damage and negatively regulates anaplerosis by inhibiting GLUD1, leading to block metabolism of glutamine into tricarboxylic acid cycle and promoting cell cycle arrest (PubMed:16959573, PubMed:17715127). In response to mTORC1 signal, SIRT4 expression is repressed, promoting anaplerosis and cell proliferation (PubMed:23663782). Acts as a tumor suppressor (PubMed:23562301, PubMed:23663782). Also acts as a NAD-dependent protein deacetylase: mediates deacetylation of 'Lys-471' of MLYCD, inhibiting its activity, thereby acting as a regulator of lipid homeostasis (By similarity). Does not seem to deacetylate PC (PubMed:23438705). Controls fatty acid oxidation by inhibiting PPARA transcriptional activation (PubMed:24043310). Impairs SIRT1-PPARA interaction probably through the regulation of NAD(+) levels (PubMed:24043310). Down-regulates insulin secretion (PubMed:17715127).
Cellular Location	Mitochondrion matrix {ECO:0000255|HAMAP- Rule:MF_03161, ECO:0000269|PubMed:16079181, ECO:0000269|PubMed:16959573, ECO:0000269|PubMed:17715127}
Tissue Location	Detected in vascular smooth muscle and striated muscle. Detected in insulin-producing beta-cells in pancreas islets of Langerhans (at protein level). Widely expressed. Weakly expressed in leukocytes and fetal thymus.

References

1.Eur J Histochem. 2011 Mar 21;55(1):e10.2.J Biol Chem. 2014 Feb 14;289(7):4135-44.

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